Recent surveys of wintering waders at Lake Turkana, Kenya with details of 1989 counts on the northeast shore

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Lake Turkana accounts for a substantial proportion of the Palaearctic waders wintering in Kenya (Summers *et al.* 1987). Its long stretches of rocky or sandy shore support rather low numbers, but its muddy bays and deltas can attract large concentrations. The best known of these, Ferguson's Gulf, was counted several times in the 1970s and early 1980s (see, e.g. Fry *et al.* 1974, Grimmett 1987, Pearson *et al.* in press). Little Stints *Calidris minuta* were sometimes present in tens of thousands, and Curlew Sandpipers *C. ferruginea* and Marsh Sandpipers *Tringa stagnatilis* in thousands, while coastal species such as Grey Plover *Pluvialis squatarola,* Sanderling *C. alba* and Greater Sandplover *Charadrius leschenaultii* were frequently reported. During the 1980s the lake fell to its lowest recorded levels. Ferguson's Gulf dried completely in January 1986 and has not filled again since. Attention has therefore been directed to other parts of the lake where waders had not been counted systematically before.

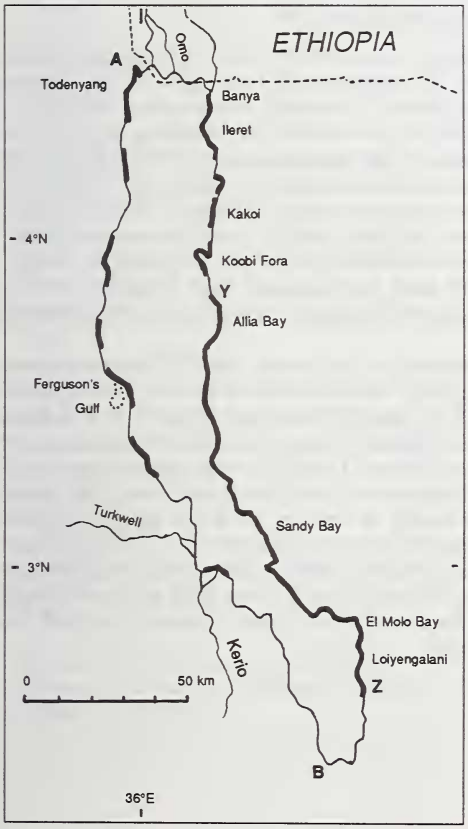

Figure 1. *Lake Turkana showing localities mentioned in the text. Shores counted during surveys between 1986 and 1989 are indicated by bold lines*

On the western side, surveys in March 1986 and February 1988 covered between them about 40% of the shoreline from the Kerio delta to Todenyang (for details see Pearson *et al.* in press). Nearly 24 000 Palaearctic waders were counted along seven stretches which totalled about 80 km. Long sandy beaches held a scattering of Little Stints (<20 km^{-1}) and a few Ringed Plovers *Charadrius hiaticula*, Greenshanks *Tringa nebularia* and Common Sandpipers *Actitis hypoleucos*, but larger gatherings were found around lugga mouths and silty pools. In muddier habitat, over 2000 waders were counted along 7 km near the Kerio River mouth, and over 16 000

on recently exposed flats near Todenyang, and these included many Marsh Sandpipers, Curlew Sandpipers and Caspian Plovers *Charadrius asiaticus*. Extrapolating from densities for different shore habitats (mud/silt, gravel and sand) as estimate of 50 000 Palaearctic waders (70% of them Little Stints) was obtained for the whole western lake shore. In addition, in February 1988, >15 000 waders were seen within Kenya on new mudflats east of Todenyang, at the western end of the north (Omo delta) shore of the lake.

On the eastern side, a full count of water birds was made during January–February 1987 from Loiyengalani north to Allia Bay, a distance of 165 km (Shekkerman & van Wetten 1987). The 27 000 waders found were again mainly Little Stints, but included also a remarkable 4500 Black-tailed Godwits *Limosa limosa*. The main concentrations were in sheltered muddy sites, Loiengalani and El Molo Bays, Sandy Bay and Allia Bay. In January 1989, we attempted to complement this work with a survey of the northeast shore of the lake. The results of this exercise are given and discussed below.

1989 counts and discussion

Waders were counted along four stretches of the northeast shore, between Banya near the Ethiopian border and Koobi Fora. This represented about 65% of the section marked X–Y in Fig. 1. The lake had risen some 1.5 m during July–August 1988, but by the time of this survey it had receded in most places from the bordering grassland to give a narrow beach. For several kilometres to the north and south of Ileret this was of mud or silt, while a muddy, marshy shore stretched for a few kilometres north from Koobi Fora spit. These areas held good numbers of waders (>200 km^{-1}). Around Kakoi, however, and to the south of Koobi Fora, the beach was of gravel or sand and wader numbers were low (<50 km^{-1}). There were no extensive mudflats. It is possible, though, that a year earlier, when large areas of mud were exposed near Todenyang in the northwest corner of the lake, similar expanses with flocks of waders may have existed north of Ileret.

Over 9000 Palaearctic waders were counted in total along some 55 km of shoreline (see Table 1). In addition to the total observed numbers of each species, Table 1 gives estimated totals for the whole section X–Y, about 90 km from the north end of Allia Bay to the border. Figures have been extrapolated bearing in mind the prevalence of various habitat types along the uncounted shores. Little Stint was predominant in all counts, but there were many Curlew Sandpipers at Ileret and Koobi Fora. Only small groups of Black-tailed Godwits were found. A total of 69 Little Ringed Plovers *Charadrius dubius* was noteworthy, as were the eight Kentish Plovers *C. alexandrinus*, the first records from the east shore of the lake. The southern part of Allia Bay was also visited, but the lake was higher than in 1987 and there was less mud and more gravel and bordering grassland. The large flocks of Black-tailed Godwits reported by Shekkerman & van Wetten were not found.

Table 1. *Numbers of Palaearctic waders counted along the northeast shore of Lake Turkana, January 1989*

Site/date:	Ileret–Banya 25 Jan	S from Ileret 26 Jan	Bay N of Kakoi 26 Jan	Kakoi beach 27 Jan	N from Koobi Fora 27 Jan	Koobi Fora & spit 28 Jan	Total obs count	Estimated count for X–Y (Fig. 1)
Shorelength	15 km	8 km	7 km	8 km	7 km	10 km	55 km	*c.* 90 km
Habitat	narrow muddy edge	silt & sand lugga mouth	silt & sand	sand & gravel	mud & marsh veget.	gravel & silty pools		
Little Ringed Pl†	11	24	6	3	2	23	69	90
Ringed Pl	114	125	92	15	20	97	463	700
Kentish Pl	3	3				2	8	10
Mongolian Spl						1	1	1
Caspian Pl	44	160	73	4	2	9	292	400
Grey Pl	1					1	2	3
Sanderling						2	2	2
Little Stint	1146	1760	910	265	952	809	5842	8500
Temminck's S	2	2	1		1		6	8
Curlew S	308	618	190	25	60	701	1902	2500
Ruff	50	30	16	3	40	6	145	180
Common Snipe	1				5		6	8
Bl-t Godwit	34	31	35	10	56	1	167	210
Curlew						1	1	1
Sp Redshank	1	1			1		3	4
Redshank	2	1					3	4
Marsh S	56	66	83	3	68	71	345	450
Greenshank	15	26	15	14	18	6	94	160
Green Sand	1	1			2		4	5
Wood Sand	20	60	19	8	63	2	172	270
Common Sand	11	17	2	12	5	6	53	100
Turnstone						1	1	1
Avocet*	12	40	8	7	4	3	74	110
Bl-wing Stilt*	159	174		18	115	170	636	900

†scientific names are given in Table 2
*These two species, although included in Tables 1 and 2, are probably mainly of Afrotropical origin

Table 2. *Estimates of wader numbers wintering on the east and west shores of Lake Turkana, based on surveys between March 1986 and January 1989. See Fig. 1 for explanation of the sections*

	eastern shore section X–B	western shore section A–B
Little Ringed Plover *Charadrius dubius*	170	310
Ringed Plover *C. hiaticula*	3180	2360
Kentish Plover *C. alexandrinus*	10	50
Greater Sandplover *C. leschenaultii*	10	10
Mongolian Sandplover *C. mongolus*	10	20
Caspian Plover *C. asiaticus*	980	2150
Grey Plover *Pluvialis squatarola*	10	80
Sanderling *Calidris alba*	10	40
Little Stint *C. minuta*	29400	36600
Temminck's Stint *C. temminckii*	10	70
Curlew Sandpiper *C. ferruginea*	3440	2650
Ruff *Philomachus pugnax*	870	400
Common Snipe *Gallinago gallinago*	20	10
Black-tailed Godwit *Limosa limosa*	4790	10
Curlew *Numenius arquata*	20	20
Spotted Redshank *Tringa erythropus*	10	10
Redshank *T. totanus*	10	10
Marsh Sandpiper *T. stagnatilis*	1340	1100
Greenshank *T. nebularia*	850	550
Green Sandpiper *T. ochropus*	20	10
Wood Sandpiper *T. glareola*	760	280
Common Sandpiper *Actitis hypoleucos*	1090	600
Turnstone *Arenaria interpres*	60	10
Avocet *Recurvirostra avosetta**	180	250
Black-winged Stilt *Himantopus himantopus**	2200	750

*These two species, although included in Tables 1 and 2, are probably mainly of Afrotropical origin

Other species recorded in these surveys were Pacific Golden Plover *Pluvialis fulva* (1: El Molo Bay, Feb 1987), Long-toed Stint *Calidris subminuta* (1: Sandy Bay Feb 1987), Terek Sandpiper *Xenus cinereus* (1: Ferguson's Gulf spit Mar 1986; 1: Sandy Bay Feb 1987)

Recent estimates of overall wader numbers wintering at Lake Turkana have been given by Shekkerman & van Wetten (1987) and by Pearson *et al.* (in press). However, with counts from 1986–1989 now covering all the potentially productive sections of the Kenya lakeshore, we are able to give figures with more confidence. Estimates for the east and west shores of the lake are compared in Table 2. The east shore figure for each species has been obtained by adding the 1989 figure for the section X–Y to the 1987

count for section Y–Z, then adding an estimate for the small rocky and gravel section Z–B based on densities for these habitat types given by Shekkerman & van Wetten. West shore figures, derived by extrapolation of the 1986 and 1988 counts, are those given by Pearson *et al.* (in press).

Approximately 50 000 Palaearctic waders would appear to winter on each side of the lake, although this must clearly vary from year to year as some of the main sites of attraction change. In the absence of Ferguson's Gulf, more marshy habitat now exists on the east shore, and this is reflected in the higher totals of species such as Black-tailed Godwit, Wood Sandpiper *Tringa glareola* and Ruff *Philomachus pugnax*. It is noteworthy, though, that nearly all the Temminck's Stints *Calidris temminckii* found were around the Kerio delta. Coastal waders occur mainly on the west shore. This is not perhaps surprising since onshore winds and constant wave action tend to produce more truly coastal conditions here.

For most species, the combined totals for the west and east shores of Turkana considerably exceed the combined wintering numbers on the more southern Rift Valley lakes of Kenya (see, e.g. Pearson & Stevenson 1980). However, for some marsh waders, Common Snipe *Gallinago gallinago*, Wood Sandpiper, Ruff and Spotted Redshank *Tringa erythropus*, Turkana numbers are rather low, and southern sites such as Lakes Nakuru and Naivasha provide more important Kenyan wintering grounds. No survey of Lake Turkana is complete without the Omo delta. This area, mainly in Ethiopia, undoubtedly contains extensive areas of mudflat and marsh, and probably holds large numbers of waders (Pearson *et al.* in press). It is to be hoped that its exploration will soon become possible.

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